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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/926,149  | 09/12/2001  | Naomasa Shiraishi    | 213876US2PCT        | 2535             |
| 22850   | 7590        | 02/02/2004           | EXAMINER            |                  |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      | MATHEWS, ALAN A     |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2851                |                  |

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

gm

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/926,149             | SHIRAISHI, NAOMASA  |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Alan A. Mathews        | 2851                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 55-90 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 55-64, 76-81 and 89 is/are allowed.
- 6) ☒ Claim(s) 65-68, 72, 73, 82-84, 87, 88 and 90 is/are rejected.
- 7) ☒ Claim(s) 69-71, 74, 75, 85 and 86 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 69 is objected to because of the following informalities: In claim 69, line 2, there is no proper antecedent basis for "said mask cleaning system". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. Claim 65-68, 72, 73, 82-84, 87, 88, 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaji et al. (U. S. Patent No. 5,559,584) in view of either Chiba et al. (U. S. Patent No. 6,337,161) or Klebanoff et al. (U. S. Patent No. 6,153,044), or Sego (U. S. Patent No. 5,422,704). Miyaji et al. discloses in figure 5 and column 7, lines 60-67, and column 8, a sealed mask room 1 that covers an optical path near mask (reticle) R1 of the optical path of the mask R1 to substrate W. Sealed mask room 1 is filled with a gas having a characteristic of absorbing little of the exposure light (see column 8, lines 10-18 and lines 42-60). A sealed mask-reserve room 12 temporarily contains the mask R1 before being carried into mask room 1. A gas replacement system 14, V9 is connected to the mask-reserve room 12 that supplies a specific gas (ionized nitrogen gas) to the mask-reserve room 12. Thus, Miyaji et al. discloses the invention claimed except for specifically stating that it has a gas-replacement mechanism in the sealed mask-reserve room that replaces a gas existing in a space between the mask and a pellicle

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disposed in a vicinity of the mask with the specific gas. In other words, Miyaji et al. does not show a mask with a pellicle and a mechanism for allowing the specific gas to get into the space between the mask and pellicle. Chiba et al. discloses holes 8 for allowing air inside. Klebanoff et al. discloses a mechanism allowing air inside pellicle 100 (see column 4, lines 46-67). Sego discloses a pellicle with a holes 261 and 262 allowing gas inside. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide Miyaji et al. with a mask having a pellicle and providing a hole (vent) to allow the gas to go in between the pellicle and reticle in view of Chiba et al. or Klebanoff et al. or Sego for the well known purpose of better protecting the mask by having the pellicle and for the purpose of allowing an equalization of pressure by having holes in the pellicle structure. The gas-replacement mechanism would include the holes in the pellicle structure. With respect to claim 66, elements 15 and 16 are the mask-transport system. With respect to claim 70, S1 and S2 are doors. With respect to claim 72, column 1, lines 34-35 disclose the use of a laser of wavelength 193nm.

***Allowable Subject Matter***

3. Claims 55-64 and 76-81, 89 are allowed. Claims 70, 71, 74, 75, 85, and 86 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 69 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any

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intervening claims and subject to correction of the objection in paragraph 1 above. The reasons for the indicated allowability of the claims are as follows:

The prior art of record does not disclose or suggest a mask cleaning system that removes materials having absorption for exposure light and existing around said mask in said mask-reserve room in combination with all the other elements recited in independent claim 55.

The prior art of record does not disclose or suggest the step of cleaning said mask in said reserve room to remove material having absorption for exposure light and existing around said mask in combination with all the other steps recited in independent claim 76.

The prior art of record does not disclose or suggest a mask cleaning system that includes a pressure reduction mechanism that reduces pressure in said mask-reserve room in combination with all the other elements recited in the parent claims of dependent claim 69.

The prior art of record does not disclose or suggest a delivery port provided into and from which a sealed-type mask container containing said mask and having a door that can be opened and closed is loaded and unloaded, and in said mask-reserve room, an open-close mechanism is provided that opens and closes the door of said mask container to isolate

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the inside of said mask-reserve room from the outside in combination with all the other elements recited in dependent claim 70 and its parent claims.

The prior art of record does not disclose or suggest a substrate room constituted by a sealed room that covers at least an optical path near a substrate of the optical path of said exposure light from said mask to said substrate and that is filled with said specific gas in combination with all the other elements recited in dependent claim 74 and its parent claims.

The prior art of record does not disclose or suggest the step of said mask is transported to said reserve room within a sealed-type mask container having a door that can be opened and closed, and said mask container is opened and closed by an open-close mechanism provided by said reserve room in combination with all the other steps recited in independent claim 85 and its parent claim.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

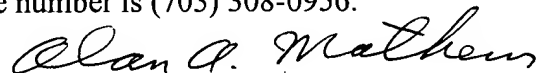
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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (703) 308-1706. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on (703) 308-2847. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Alan A. Mathews  
Primary Examiner  
Art Unit 2851

AM